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Interview With Dr Lynch About the MTHFR Gene Mutation

These are my notes from an interview with Dr Lynch of MTHFR.net with Starlene Stewart on her blog Radio Show GAPS Diet Journey. You can listen to it [here](#).

Conditions that have been linked to MTHFR include autism, IBS, Schizophrenia, addictions, Type 1 Diabetes, many cancers, Fibromyalgia, MS, Chronic Fatigue Syndrome, many fertility issues and birth defects including cleft palate, tongue tie, tethered cord, and congenital heart defects. A longer list is available on Dr Lynch's site. This genetic mutation was discovered in the 80s because people started seeing many things like strokes in young children and identified high homocysteine levels as the cause, and the new focus on the human genome allowed the connection to be made. Dr Lynch himself came across MTHFR by researching the underlying causes of bipolar disorder.

The MTHFR gene is about 20,000 base pairs. The terms C677T or A1298C refer to where on the gene the mutation occurs and which nucleotides are switched with each other. The order of the nucleotides determines the shape and therefore function and effectiveness of the enzyme called MTHFR that the gene codes for. One mutation in a specific spot (being heterozygous for that one mutation) results in the enzyme being somewhat misshapen, having two copies of the mutation at a given spot (being homozygous) means that the enzyme is more affected and even less functional. The order of mutation combos from least severe to most severe is: one copy of 1298, 2 copies of 1298, one copy of 677 (what Roo has), one copy of each, 2 copies of 677. With 2 copies of 677, there is about a 70% reduction in the function of the enzyme. 2 copies of 1298 results in a 40% reduction. In the research, kids with autism seem to often have one of each, which is called compound heterozygous.

Here is Dr Lynch's list of the 16 things that he is doing to help his own family, who have many variations of MTHFR: gluten-free diet, dairy-free diet, probiotics, sauna for detoxing at least 20 times per year, filtered water, no carpets in the house, air purification, organic food, very limited processed foods, no artificial soaps, odors, or perfumes, no cleaning products aside from natural soap and vinegar, limited pressboard in the home, organic bedding and mattresses, multivitamin with methylfolate, pure fish oil, CoQ10, cal/mag, vitamin D3, limited sugar intake, and no soda. This genetic mutation is not "fate" - lifestyle choices can make a huge difference on how much we are impacted. Dr Lynch gives the example of two populations with high levels of the 677 mutation, people in Mexico and people in southern Italy, and yet the rate of neural tube defects is very different between the two groups, presumably from lifestyle and dietary differences. Another way of saying this is that environmental factors matter in how much having this gene affects our daily lives.

MTHFR causes undermethylation, which means that the process of methylation is under functioning. Methylation does many things, including detoxification. The reason that many things are on the above list, such as avoiding artificial scents, is because methylation is required to process them. He feels that the expression of MTHFR is very high in the US now because of our poor food supply, stressful lifestyles, high use of chemicals and plastics, etc. MTHFR also makes it harder for us to regulate our blood sugar, which is why there is a connection with diabetes. It also causes us to have trouble regulating our hormones and this can lead to many problems.

To learn more about methylation, he recommends watching the MTHFR and Methylation video on YouTube:

Dr Lynch has a company called [Seeking Health](#) that can assist with testing. Dr Lynch also provides consultations. He says that if your doctor will order the test insurance usually pays for it. It may be important to look at your lab report yourself, as some doctors don't know how to read the tests. He suggests NOT treating yourself, or allowing your doctor to treat you, by just giving high amounts of methylfolate such as taking methylfolate supps or drugs such as Deplin. He says this can cause seizures, mood swings, and other unpleasant side-effects. He suggests treating by focusing on the GAPS protocol type stuff, which is the list above of how he helps his family. He also says new information shows that we can get the active form of folate, methylfolate, from leafy greens. He says to start treatment by going on GAPS, or eating paleo, basically putting as little demand on the methylation system. This frees up the methylfolate that we do make to do what it needs to do- to detoxify, regulate neurotransmitters, etc. He also says that folic acid needs to be avoided.

Some tidbits from the phone questions:

There are 200-400 different types of folate that occur naturally. The type of folate that occurs naturally in greens is okay to eat if you have MTHFR.

Sedation- people with MTHFR are more sensitive to certain kinds of anesthetic, especially nitrous oxide. He said people with the 677 mutation (the form Roo has) are more sensitive and should never be given nitrous oxide. This is because it inhibits the enzyme Methionine Synthase, which can lead to very high levels of homocysteine.

Dr Lynch has a few modifications that he suggests from the GAPS diet. He says that raw eggs bind to biotin and deplete it. Biotin inhibits the reproduction of yeast. He encourages cooked eggs, just not raw. He also says that we need to consider A1 vs A2 milk, when having milk, rather than assuming that all milk is okay if raw or fermented. You need to address MTHFR in order to really heal the gut. The intestines are supposed to regenerate quickly, the whole thing in 7 days, MTHFR needs to be working well in order for that to happen.

(As an aside, he says that krill oil is better at supporting the brain than fish oil because it is a phospholipid whereas fish oil is a triglyceride, and the brain is made of phospholipid).

"Medicine is supposed to be 80% history" (and 10% labs/diagnostics, and 10% physical exam). ..the doctor is supposed to listen first, then ask questions. Testing has taken on too large of a role and tests are fraught with problems and can be inaccurate. Testing is also a snapshot in time.